



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/854,963

05/14/2001

Eldad Zeira

I-2-170.4US

8819

24374

7590

10/15/2004

VOLPE AND KOENIG, P.C.

DEPT. ICC

UNITED PLAZA, SUITE 1600

30 SOUTH 17TH STREET

PHILADELPHIA, PA 19103

EXAMINER

JAIN, RAJ K

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/854,963

Applicant(s)

ZEIRA ET AL.

Examiner

Raj Jain

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3-5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The title of the invention may not exceed 500 characters in length and must be as short and specific as possible. The following title is suggested:

**REASSIGNING PHYSICAL CHANNELS OF A USER SERVICE
EXPERIENCING HIGH INTERFERENCE LEVELS IN A HYBRID WIRELESS
COMMUNICATION SYSTEM.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dillinger et al (US006519240B1) hereafter referred to as Dillinger in view of Alamouti et al (US005933421A) hereafter referred to as Alamouti.

- Regarding claim(s) 1, 4 and 7, Dillinger discloses a hybrid wireless time division multiple access (TDMA)/code division multiple access (CDMA) communications system whereby the communications means between the base station and one or more mobile stations is performed and managed by at least one Radio Network Management (RNM) device for allocating radio resources (see col 3 lines 41-62 and Fig 1), the wireless system comprises of:

- ordering time slots of the new user service in descending order of measured interference (see col 2 lines 55-67, col 5 lines 35- col 6 lines 20, Figs 5 and 6, claim 1, the ordering of timeslots is carried out by the radio resource device RNM based on the signal to noise ratios as determined by the RNM device);

- sequentially evaluating and reassigning the new user service physical channels in each time slot based on the timeslot ordering and the time slot sequence (see col 5 lines 35- col 6 lines 20, Figs 5 and 6, claim 1, each (sequential) channel allocation and assignment is carried out in the base station based on signal to noise ratios calculations for each of the timeslots, if an adequate signal-to-noise ratio is found within a timeslot sequence set than a timeslot or channel is allocated to the mobile station).

Dillinger fails to disclose channel or timeslot allocation based on reception quality of the user.

Alamouti discloses channel or timeslot allocation based on reception quality of the user (see col 22 lines 43-64 and Table 1.3).

Channel allocation using received signal strength indicator (RSSI), or reception quality minimizes interference for that channel and thus lowering overall network interference (signal to noise ratio) within a given frequency band and inturn increasing channel capacity.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Alamouti within Dillinger of channel allocation based on reception quality of the user which would improve the network performance by lowering overall network interference (signal to noise ratio) within a given frequency band and therefore increasing network channel capacity.

Regarding claims 2, 5 and 8, Dillinger fails to disclose averaging of interference for all of the user service physical channels. Alamouti discloses average interference for all of the user service physical channels based on delay compensation and an established threshold (see col 26 lines 16-40, Fig4.2)

Delay compensation allows for signals being received from plurality of users to properly synchronize with one base station and distinguish users being served by neighboring base stations and minimize interference from the same neighboring base stations.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Alamouti's delay compensation technique within Dillinger so as to properly synchronize users with one base station and distinguish users being served by neighboring base stations and minimize interference from the same neighboring base stations.

Regarding claims 3, 6 and 9, Alamouti discloses desired (target) reception quality with respect signal to interference (noise) ratio (see col 22 lines 43-64 and Table 1.3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj Jain whose telephone number is 571-272-3145. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Application/Control Number: 09/854,963

Page 5

Art Unit: 2664

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

RJ

September 24, 2004

A handwritten signature in black ink, appearing to be 'W. J. R.', with a long horizontal line extending to the right.